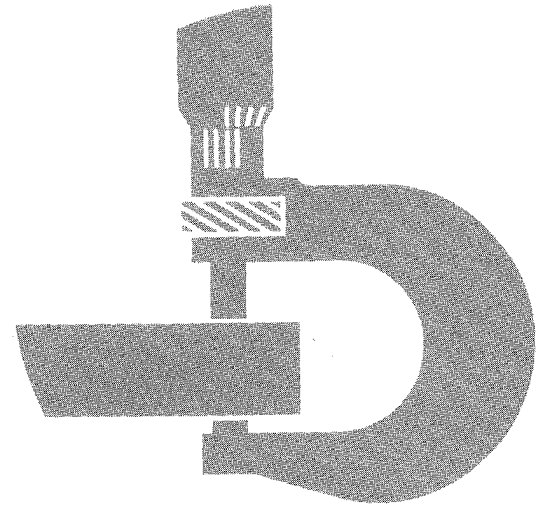


655 Crawler Loader



TECHNICAL MANUAL

TM-(1250) (Apr-87)

LITHO IN U.S.A.

**655 CRAWLER LOADER
Technical Manual
TM-1250 (Apr-81)**

SECTION AND GROUP CONTENTS OF THIS MANUAL

SECTION I - GENERAL INFORMATION

- Group I - Contents, Index and Page List
- Group II - Introduction and Safety Information
- Group III - General Specifications
- Group IV - Lubrication

SECTION 1 - TRACKS

- Group 0130 - Track Systems
- Group 0199 - Specifications and Special Tools

**SECTION 2 - AXLES AND SUSPENSION
SYSTEMS**

- Group 0201 - Drive Axle Housing
- Group 0250 - Axle Shaft, Bearings and Reduction Gears
- Group 0299 - Specifications and Special Tools

SECTION 3 - TRANSMISSION

- Group 0315 - Controls
- Group 0325 - Input Drive Shafts and U-Joints
- Group 0360 - Hydraulic System
- Group 0370 - Clutch Disconnect and Controls
- Group 0399 - Specifications and Special Tools

SECTION 4 - ENGINE

- Group 0400 - Removal and Installation
- Group 0401 - Crankshaft and Main Bearings
- Group 0402 - Camshaft and Valve Actuating Means
- Group 0403 - Connecting Rods and Pistons
- Group 0404 - Cylinder Block
- Group 0407 - Oiling System
- Group 0408 - Ventilating System
- Group 0409 - Cylinder Head and Valves
- Group 0410 - Exhaust Manifold
- Group 0413 - Fuel Injection System
- Group 0416 - Turbocharger
- Group 0417 - Water Pump
- Group 0418 - Thermostats, Housings, and Water Piping
- Group 0419 - Oil Cooler
- Group 0420 - Fuel Filter
- Group 0421 - Fuel Transfer Pump
- Group 0422 - Starting Motor and Fastenings
- Group 0429 - Fan Drive
- Group 0433 - Flywheel, Housing and Fastenings
- Group 0499 - Specifications and Special Tools

SECTION 5 - ENGINE AUXILIARY SYSTEMS

- Group 0505 - Cold Weather Starting Aids
- Group 0510 - Cooling System
- Group 0515 - Speed Controls
- Group 0520 - Intake System
- Group 0530 - External Exhaust System
- Group 0540 - Mounting Frame
- Group 0560 - External Fuel Supply System
- Group 0599 - Specifications and Special Tools

SECTION 8 - TRANSFER DRIVE

- Group 0841 - Housing and Covers
- Group 0851 - Gears, Shafts, Bearings
- Group 0899 - Specifications and Special Tools

SECTION 11 - PARKING EMERGENCY BRAKE

- Group 1111 - Active Elements
- Group 1115 - Controls Linkage
- Group 1160 - Hydraulic System
- Group 1199 - Specifications and Special Tools

SECTION 15 - EQUIPMENT ATTACHING

- Group 1511 - Drawbar
- Group 1512 - Towbar

SECTION 16 - ELECTRICAL SYSTEMS

- Group 1671 - Batteries, Supports and Cables
- Group 1672 - Alternator, Regulator and Charging System Wiring
- Group 1673 - Lighting System
- Group 1674 - Wiring Harness and Switches
- Group 1675 - System Controls
- Group 1676 - Instruments and Indicators
- Group 1699 - Specifications and Special Tools

**SECTION 17 - FRAME, CHASSIS OR SUPPORT-
ING STRUCTURE**

- Group 1740 - Frame Installation
- Group 1746 - Frame Bottom Guards
- Group 1749 - Chassis Weights

SECTION 18 - OPERATOR'S STATION

- Group 1810 - Operator Enclosure
- Group 1821 - Seat and Seat Belt
- Group 1830 - Heating and Air Conditioning
- Group 1899 - Specifications and Special Tools

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SECTION AND GROUP CONTENTS OF THIS MANUAL—Continued

SECTION 19 - SHEET METAL AND STYLING

- Group 1910 - Hood or Engine Enclosures
- Group 1921 - Grille and Grille Housing

SECTION 20 - SAFETY, CONVENIENCE AND MISCELLANEOUS

- Group 2003 - Fire Extinguisher
- Group 2004 - Horn and Warning Devices
- Group 2006 - Cigar Lighter

SECTION 31 - LOADER

- Group 3102 - Buckets
- Group 3115 - Controls Linkage
- Group 3140 - Frames
- Group 3160 - Hydraulic System
- Group 3199 - Specifications and Special Tools

SECTION 42 - GROUND CONDITIONING TOOL

- Group 4201 - Blades, Teeth, Shanks
- Group 4215 - Controls Linkage
- Group 4260 - Hydraulic System

SECTION 90 - SYSTEM TESTING

- Group 9005 - General Information - Seven Basic Steps of Testing and Diagnosis
- Group 9010 - Engine
- Group 9015 - Electrical System
- Group 9020 - Power Train
- Group 9025 - Hydraulic System (Flow Meter)
- Group 9025A - Hydraulic System (Analyzer)
- Group 9026 - Hydrostatic System
- Group 9030 - Miscellaneous Components
- Group 9031 - Heating and Air Conditioning
- Group 9035 - Specifications and Special Tools

The specifications and design information contained in this manual were correct at the time it was printed. It is John Deere's policy to continually improve and update our machines. Therefore, the specifications and design information are subject to change without notice. Wherever applicable, specifications and design information are in accordance with SAE and ICED standards.

MAINTENANCE WITHOUT ACCIDENT

SAFETY AND YOU



T27999N

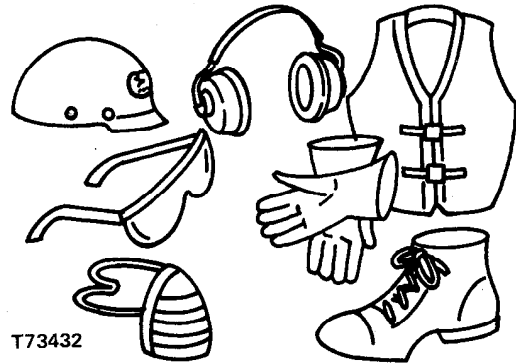
⚠ CAUTION: This safety symbol followed by the word "caution" identifies important safety messages in this manual and on the crawler loader. When you see this symbol, be alert to the possibility of personal injury and carefully read the message that follows.



T73433

T73433

Be prepared if an accident or fire should occur. Know where the first aid kit and the fire extinguishers are located - know how to use them.



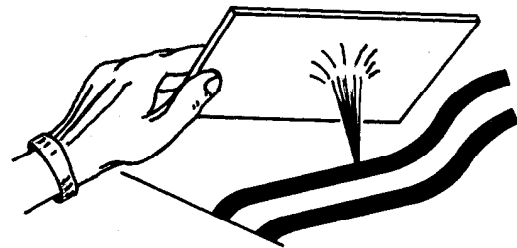
T73432

Wear safety equipment.



T45672

Wear fairly tight clothing.



T45794

⚠ CAUTION: Escaping fluid under pressure can have sufficient force to penetrate the skin, causing serious injury. Before disconnecting lines, be sure to relieve pressure. Before applying pressure, be sure connections are tight and lines, pipes and hoses are not damaged. Use a piece of cardboard or wood, rather than hands, to search for leaks.

If injured by escaping fluid, see a doctor at once. Serious infection or reaction can develop if proper medical treatment is not administered immediately.

MAINTENANCE WITHOUT ACCIDENT

KEEP SHOP AND STORAGE AREA CLEAN



Maintenance area should be adequately vented.

Keep maintenance area clean and dry.

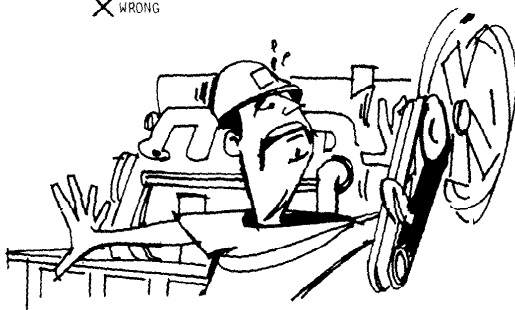
Store flammable materials in a cool and well-vented area out of reach of unauthorized personnel.

FOLLOW SAFE WORKING CONDITIONS

Perform work on equipment only if authorized to do so.

Follow recommended procedures.

X WRONG



Do not service equipment while it is being operated or engine is running.

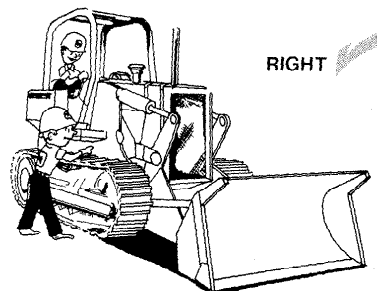
Keep hands away from moving parts.

Do not use open flame around machine.

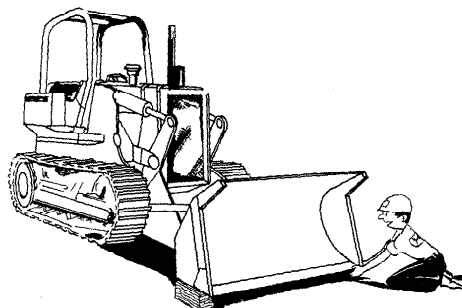
If machine is on an incline, block it securely.

Use hoisting equipment for lifting heavy parts.

Litho in U.S.A.



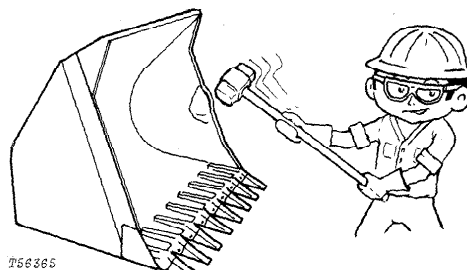
If it is necessary to make checks with the engine running, always use two service technicians - one, the operator at the controls, the other checking within sight of the operator.



Support all raised equipment.

Do not work under raised bucket.

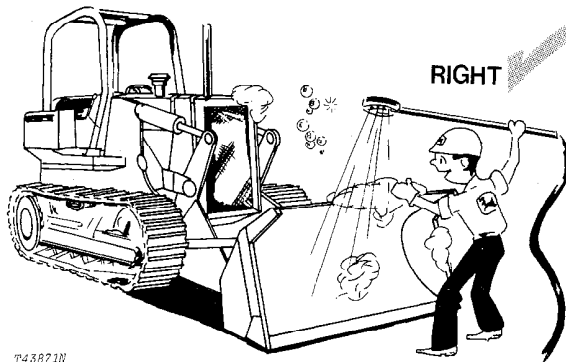
Always lower bucket before working on it.



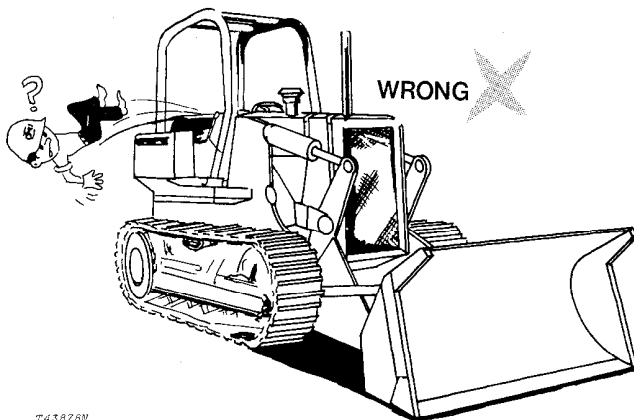
Wear safety glasses when drilling, grinding or hammering metal.

MAINTENANCE WITHOUT ACCIDENT

OBSERVE SERVICE PRECAUTIONS



Keep all equipment free of dirt and oil.



Remove oil, grease, mud, ice, or snow from floor of operator's compartment or steps.

Do not remove radiator filler cap unless engine is cool. Then loosen cap slowly to the stop. Release pressure before you remove cap.

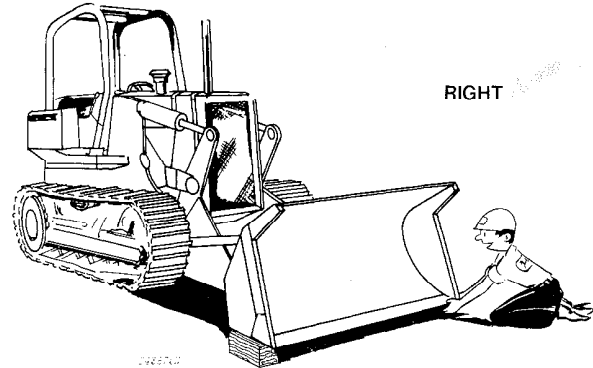
Check exhaust system periodically for excessive leakage.

Relieve hydraulic pressure before working on hydraulic system.

Use the correct test group when checking hydraulic pressure.

Discharge accumulators completely before recharging or servicing.

OBSERVE REPAIR PRECAUTIONS



Securely block bucket before changing cutting edges. Wear gloves when working with sharp edges.

Relieve hydraulic pressure before working on hydraulic system.

Turn off battery disconnect switch before repairing the electrical system or performing a major overhaul.

Install lift arm locking pin before working in engine area.

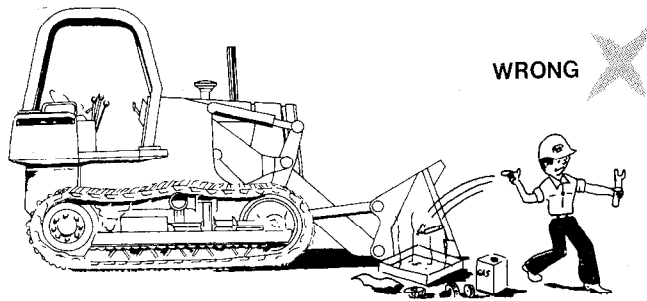
CHECK SAFETY EQUIPMENT ON MACHINE

Check that all protective devices (guards, canopies, shields, ROPS, seat belts, etc.) are installed and secured on machine.

Inspect machine carefully for leakage from lines, hoses, and fittings.

MAINTENANCE WITHOUT ACCIDENT

AVOID EXPLOSIONS OR FIRE



T43866N

Do not smoke while refueling.

Do not smoke while handling highly flammable materials.

Shut off engine when refueling.

Use care in refueling if engine is hot.

Use good commercial, nonflammable solvents for cleaning parts.

Although it is impractical to try to cover every possible maintenance situation, the safety precautions recommended here should serve to develop and promote safe maintenance procedures.

The information contained in this manual is not intended to replace safety codes, insurance requirements, federal, state, and local laws, rules and regulations. In particular, your service area or jobsite activities may be subject to state safety rules and/or federal regulation under the Occupational Safety and Health Act (OSHA). Familiarize yourself with all regulations applicable to your situation in order to avoid possible safety violations.

OBSERVE BATTERY PRECAUTIONS



T27506N

Do not place metal objects across posts to check charge.

Do not smoke near battery.

Do not allow sparks or open flame near battery.

Provide adequate ventilation when charging batteries.

Group III General Specifications

(Specifications and design subject to change without notice. Wherever applicable, specifications are in accordance with ICED and SAE Standards. Except where otherwise noted, these specifications are based on a unit equipped with 2 cu. yd. (1.53 m³) bucket with teeth, roll-over protective canopy, four counterweights, and standard equipment.)

Power (@ 2100 rpm):	SAE	DIN
Gross	122 hp (91 kW)	
Net	110 hp (97 kW)	111.5 PS

Net engine flywheel power is for an engine equipped with fan, air cleaner, water pump, lubricating oil pump, fuel pump, alternator, and muffler. The gross engine power is without fan. Flywheel power ratings are under SAE standard conditions of 500-ft. altitude and 85°F. temperature, and DIN 6270 conditions (non-corrected). No derating is required up to 10,000 feet (3000 m) altitude.

Engine: John Deere 6-cylinder turbocharged diesel, valve-in-head, 4-stroke cycle.
 Bore and stroke 4.19 × 5 in. (106.4 × 127 mm)
 Piston displacement 414 cu. in. (6.785 L)
 Compression ratio 16.2 to 1
 Maximum torque @ 1300 rpm .. 345 lb-ft (468 N·m)
 (47.7 kg-m)
 NACC or AMA (U.S. Tax) horsepower 42
 Lubrication Pressure system with full flow filters
 Main bearings 7
 Cooling Pressurized with thermostat and controlled bypass
 Fan Blower
 Dual-stage aspirated air cleaner
 with restriction indicator Dry
 Electrical system 24 volt with alternator
 Batteries (two 12-volt) Reserve capacity:
 180 minutes each

Transmission:

Cold weather starting Disconnect clutch completely disengages hydrostatic drive and all hydraulics.
 Splitter drive Pressure-lubricated helical gears drive both hydrostatic transmissions, main hydraulic pump, winch drive shaft and auxiliary pump drive.
 Drive Dual-Path, fully automatic, infinitely variable hydrostatic transmissions.
 Speeds Infinite from 0 to 6.5 mph (0 to 10.5 km/h) forward or reverse.
 Control Single-lever, variable speed, forward and reverse.

Steering:

Fully modulated, infinitely variable pedal steering for live power turns and counterrotation. No need for steering clutches or steering brakes.

Brakes:

Service Hydrostatic
 Parking ... Wet-disk brakes are automatically applied when engine is stopped, or manually applied with center foot pedal during normal operation.

Hydraulic System: Open-center

Control Single-lever bucket control with automatic bucket positioner and float position. Three-function valve.
 Pump Vane, 55 gpm (3.47 L/s) @ rated engine speed
 Pressure 2500 psi (15 514 kPa) (158.2 kg/cm²)
 Oil lines Seamless steel tubing; double-wire-braid hose
 Filter 10 micron filter in return line w/bypass

Hydraulic Cylinders: Bore Stroke

Boom (2) 5.50 in. (140 mm) 32 in. (813 mm)
 Bucket (2) 4.50 in. (114 mm) 21.52 in. (547 mm)
 Cylinder rods .. Ground, heat-treated, chrome-plated, polished
 Boom cylinder rods 3.75 in. (95 mm) dia.
 Bucket cylinder rods 2.25 in. (57 mm) dia.

Tracks (6-roller track frame with front and rear track guides and sprocket guard):

Two bar grouser 15 in. (381 mm)
 Track shoes, each side 40
 Ground contact area 2724 sq. in. (17 575 cm²)
 Ground pressure .. 11.8 psi (81.4 kPa) (0.830 kg/cm²)
 Length of track on ground 90.8 in. (2.31 m)
 Track gauge 64 in. (1.63 m)
 Carrier roller 1 each side
 Adjustment Hydraulic
 Minimum ground clearance 15.3 in. (389 mm)

SAE Operating Weight w/ROPS 32,005 lb.
(14 517 kg)

Capacities:	U.S.	Imp.	Liters
Cooling system	7 gal.	5.8 gal.	26.5
Fuel tank	73 gal.	60.8 gal.	276.3
Crankcase	18 qt.	15.0 qt.	17.0
Crankcase, including filter	20 qt.	16.7 qt.	18.9
Splitter drive	1.5 gal.	1.3 gal.	5.7
Final drive each: 1st reduction .	5.375 gal.	4.5 gal.	20.3
2nd reduction	3.5 gal.	2.9 gal.	13.2
Loader hydraulic system	37 gal.	30.8 gal.	140.1
Hydrostatic drives	33 gal.	27.5 gal.	124.9

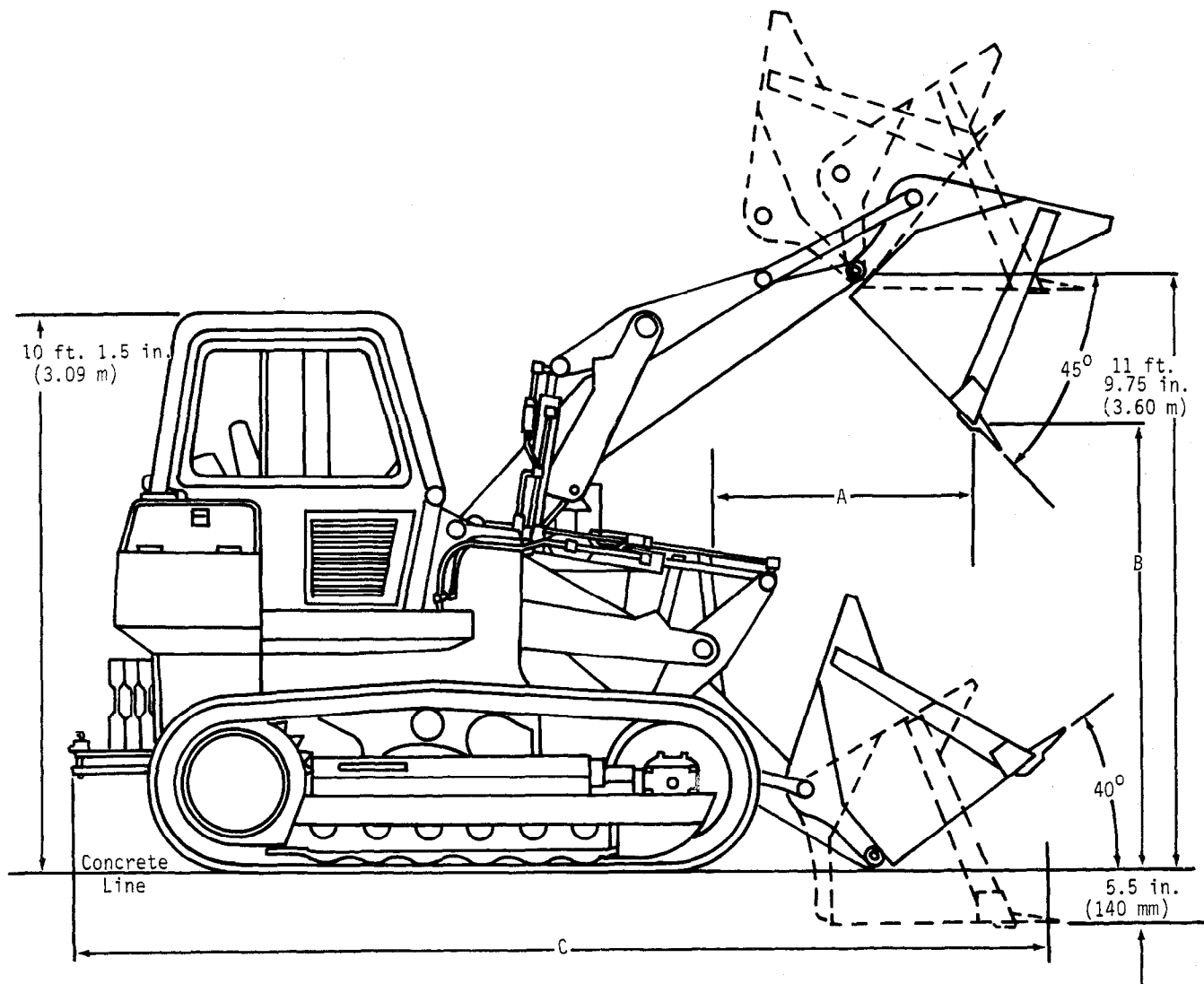
Additional Standard Equipment:

Enclosed alternator with solid-state regulator
Bottom guards
Suspension seat with armrests
Key switch
Pushbutton starting
Electric hour meter
Cigar lighter
Vandal protection
Boom safety lock pin
Muffler
Cold weather starting aid
Front idler shields
Master electrical disconnect switch
Toolbox
Transmission neutral lock with starter safety switch
Horn
Air cleaner restriction indicator
ROPS canopy with seat belt
Radiator sand shield

Special Equipment:

Oil sampling test kit
Bucket teeth, bolt-on or flush-mount weld-on
Hydraulics for rear-mounted equipment
Hydraulics for front-mounted equipment
Selector valve for ripper and multipurpose bucket
Protection package:
Limb risers for ROPS canopy
Brush screens for operator's compartment
Rear bumper
Tank guards
Fire extinguisher
Front pull hook
Cab with windshield wipers, pressurizer and heater
Air conditioner
Windshield washer
Engine coolant heater
Backup alarm
Lexan® windshield with wiper
Lexan® windows for cab
Rock guard, center section

LOADER DIMENSIONS



BUCKET CAPACITIES	DIMENSIONS		
	A	B	C
2 cu. yd. bucket (1.68 m ³)	47.5 in. (1207 mm)	9 ft. 3 in. (2.82 m)	18 ft. 3 in. (5.56 m)
1-3/4 cu. yd. (1.34 m ³) multipurpose	53 in. (1.35 m)	9 ft. 4.5 in. (2.86 m)	18 ft. 6.75 in. (5.66 m)

T79498

LOADER OPERATING DIMENSIONS

OPERATING INFORMATION	BUCKET	
	General Purpose	Multipurpose
Capacity, heaped, SAE	2 cu. yd. (1.53 m ³)	1-3/4 cu. yd. (1.34 m ³)
Capacity, struck, SAE	1.67 cu. yd. (1.28 m ³)	1.38 cu. yd. (1.06 m ³)
Bucket width	82.5 in. (2.1 m)	83.84 in. (2.13 m)
Bucket weight	1550 lb. (703 kg)	2485 lb. (1127 kg)
SAE breakout force	25,310 lb. (113 kN) (11 480 kg)	23,060 lb. (103 kN) (10 460 kg)
SAE tipping load (w/drawbar and four counterweights)	19,500 lb. (8845 kg)	18,565 lb. (8421 kg)
Raising time	5.86 sec.	5.86 sec.
Dumping time	1.27 sec.	1.27 sec.
Lowering time	3.23 sec.	3.23 sec.
SAE operating weight w/ROPS canopy	32,005 lb. (14 517 kg)	32,940 lb. (14 941 kg)

Adjustments to operating weights and tipping loads:

Add (+) or deduct (-) lb. (kg) as indicated for loader equipped with:	Loader Operating Weight	Tipping Load
Cab	+740 lb. (336 kg)	+814 lb. (369 kg)
Bucket teeth	-151 lb. (68 kg)	-198 lb. (90 kg)
Air conditioning	+65 lb. (29 kg)	0
Ripper	+2400 lb. (1089 kg)	+4516 lb. (2048 kg)
Multipurpose bucket	+935 lb. (424 kg)	-935 lb. (424 kg)
Counterweight (each)	+ or -500 lb. (227 kg)	+ or -865 lb. (392 kg)

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